

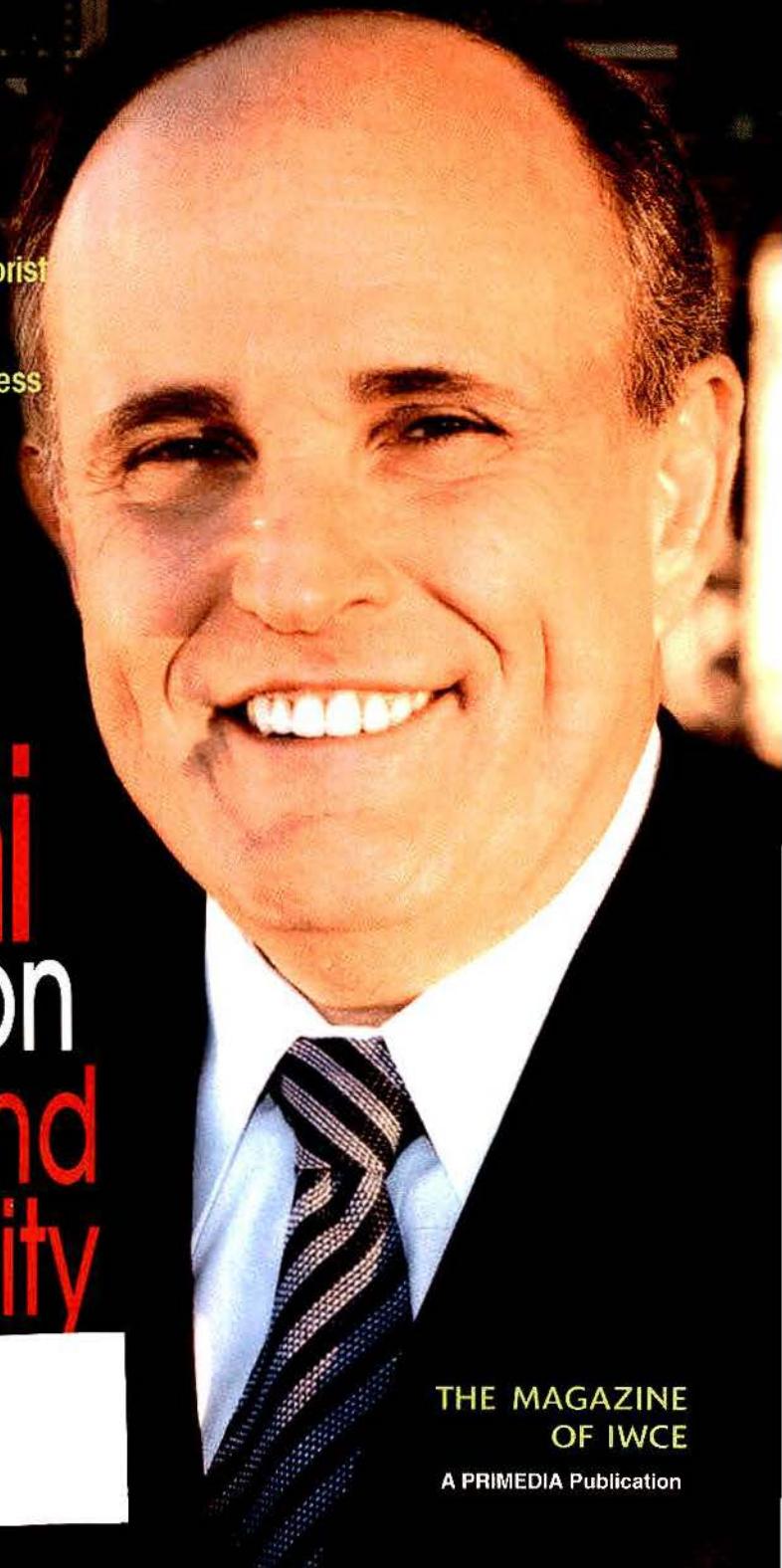
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MOBILE RADIO TECHNOLOGY

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- APCO's new president, Thera Bradshaw: Terrorist attacks have opened window of opportunity
- APCO's outgoing president, Glen Nash: Wireless industry needs voice in Homeland security political process
- Don Bishop: There's money to be made in multiple-site trunking.
- U.S. Navy reacts to terror attacks with new communications platform for public safety

**Giuliani
speaks out on
Homeland
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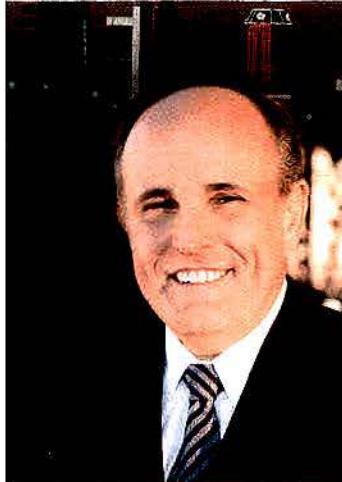
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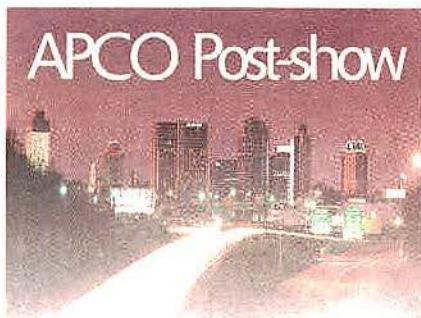
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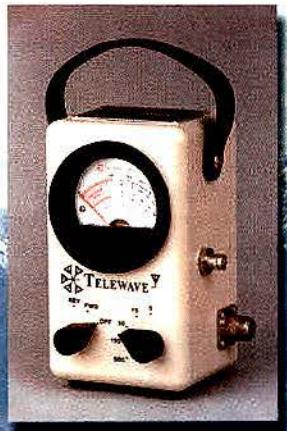
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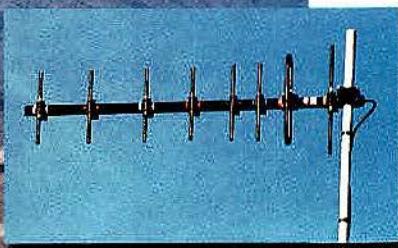
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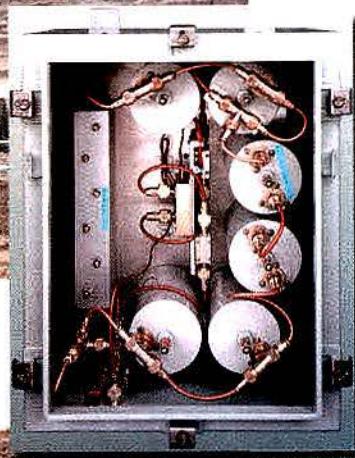


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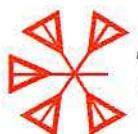
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Consensus? We got a *consensus*? Glory be.

Everyone wants the FCC to indicate how it may rule in a pending decision—unless that indication runs counter to what *he* wants.

So it goes in the FCC proceeding to reduce or eliminate interference to public safety radio communications in the 800 MHz band. One particular proposal that the FCC received has been put out for public comment by the commission, a step that indicates favored status for the proposal.

The proposal was submitted as part of reply comments in WT Docket No. 02-55 by a group that was assembled for the occasion and calls itself the Private Wireless

Coalition. Having reached a consensus among themselves, the coalition members call their proposal the "Consensus Proposal."

After this proceeding is over, these coalition members will go their separate

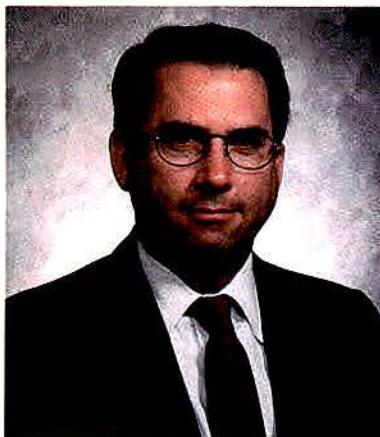
ways. In fact, some of the original members of the coalition bailed out when they couldn't abide by certain aspects of the proposal that are so darned favorable to Nextel Communications—which joined the coalition when those aspects were put in. Imagine.

Anyway, the coalition members are savvy enough to know that the FCC doesn't like to choose between widely different proposals. The agency prefers to endorse a proposal that represents a—guess what—*consensus*. What's in a name? Aaaahhhh ... success?

Let's put the entire matter on the

meat cutter and start slicing.

If you cut it one way, the coalition has broad representation. It includes organizations whose public safety and private radio members receive interference and one cellular-type carrier that causes interference. Consensus, yes.



"Coalition members are savvy enough to know that the FCC doesn't like to choose between widely different proposals"

If you cut it another way, the coalition filed one comment out of more than a hundred. Most of the comments oppose the kind of plan offered by the coalition, including those filed by some of the original coalition members who left. Consensus, no.

Set the cutter to thin slices, and the mind begins to spin with the number counting. How many entities, licensees, end-users, members of the public, and so on, are represented by each comment? How can a fair-minded regulatory agency possibly decide what proposal makes the most sense for the most people? Should the FCC base its decision on the law, or get "creative?"

Whisper: *consensus*.

Was this overheard at the FCC? "Lemme see, I got this New York

State, says move Nextel out of 800; I got this city of Baltimore, says 'hell no, we won't go,' I got this Small Business in Telecommunications, says 'Nextel caused it, Nextel fix it' ... oh, wait a minute ... here's a ... omigod ... a ... a ... *consensus*."

Glory be.

If you're a regular visitor to our Web site, you already know that on Sept. 6, the FCC asked for comment on the "consensus proposal" and set a deadline to file comments by Sept. 23. Sorry. That cycle's too fast for us to get the word out in print.

We liked the SBT reply comment enough that we put our story about it on the top of our Web site news feed and left it there for a while. Whether that's the reason more visitors to our Web site looked at it than any other of our stories on the subject, we're not sure, but they did.

Check out the "consensus proposal" and other comments via the Web site's special report, "800 MHz Interference To Public Safety."

Then get vocal. If you want the FCC to put some other proposals out for public comment, tell them. If you want to send a comment to the commission in this matter even though deadlines have passed, do it. The commission says it considers everything, and sometimes heavyweights have swayed its decision even after comment cycles have closed.

Don Bishop

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The two-way radio communications business has been rewarding.

I am not only talking in a monetary sense, but also in interaction with people and community involvement.

My company was the first Spanish-speaking two-way radio business in the Miami area. We grew with the community, facing the same challenges and risks as everyone. I have to say that in all these years, we have not lost a single penny in accounts receivable, nor have we had to send any accounts to collection.

Many years ago, we installed our first community repeater with a tone panel that gave an individual CTCSS tone per company sharing the repeater. The intention of CTCSS is so a company using the repeater only hears its own communications, not everyone else's. But in one of our periodic checks, we found that the tone panel was not working.

We replaced the tone panel. The next day we received a complaint from a group of users, saying that something was wrong with the repeater. It seems that they had liked the single tone for everyone because they could talk with each other when their own base or mobiles were not available. In fact, all the users were doing dispatch for each other. They even had regular picnics. My clients were a happy group. Today they are the most successful companies of Miami-Dade County.

What is really rewarding is walking the streets of Miami or going to meetings and people mentioning: "Hi, Manny. Remember me? You sold me my first radio." It makes me feel as though I was part of his success.

True, our business has changed in the last 10 years. We are in the "orbis digitalis" era. The small entrepreneur can no longer compete in this global economy. We have to adapt and find niches that still can use our services. But we have something to offer, and it is our personal care for our customers. No one will remember the guy who sold him the first digital radio.

—Manuel A. Alvarez Sr.
President
Beam Radio
Miami

Alvarez migrated in 1960 to the United States from Cuba, where he had worked in broadcasting and telecommunications. He founded Beam Radio in 1976.

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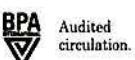
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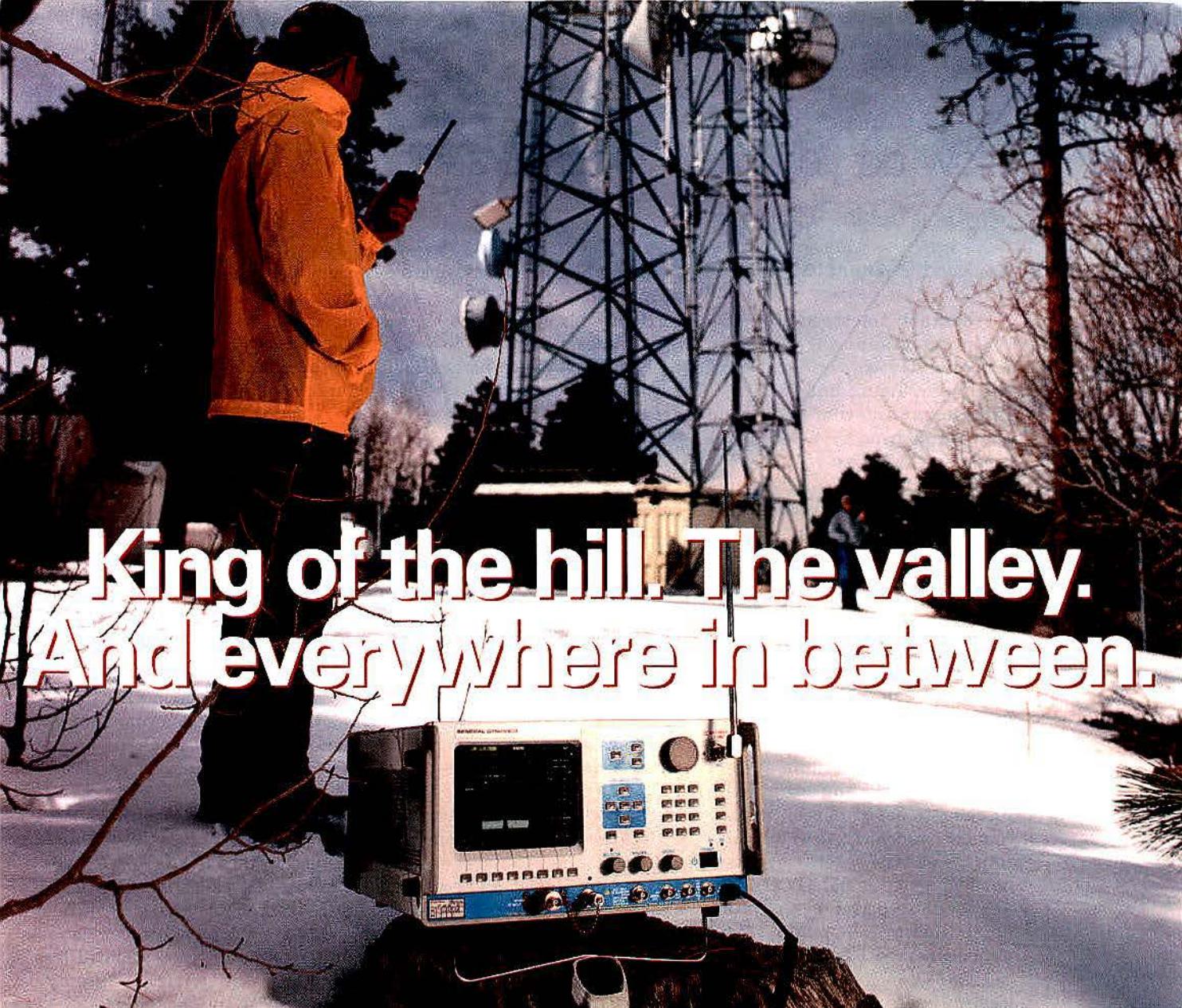
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How do you spell 'interoperability'?

Maybe it begins with an 'n.'

By David O. Dunford

Predictably, interoperability was the predominant theme at the APCO national conference in Nashville, Tenn., and the IAFC Fire-Rescue International trade show in Kansas City, Mo., both conducted in August.

Several system vendors provided interoperability solutions as a subset of their regular, proprietary products. Don Scott with JPS Communications, Raleigh, N.C., reported that business was "good." Unfortunately, many of the organization "wheels" are avoiding some arithmetic problems associated with this laudable goal of improved operations.

A nationwide ubiquitous Project 25 (interoperable) radio system would be costly and logically complex to design, build, install, connect, implement, use and maintain. We heard several numbers bandied about at the APCO show, and my derived average was about \$60 billion to refit public safety nationwide—with hardware alone.

That P.O. should delight the Major firm, but, gee-whiz, folks, isn't a huge system comprised of \$3,200 user units a bit much for just a one-way radio system? That's right. Remember it's just a one-way system. Portable and mobile radio users can communicate just one way at a time, unlike our commercial cousins using small-“c” cell phones.

And then the issue of spectrum is necessarily intertwined with discussions of procurement and deployment. The Defense Department has dropped the idea of channel-sharing with public safety in the 138–146 MHz range because we're at war. Nextel Communications continues to sniff around for an opportunity to right their wrongs by re-bundling blocks of 700 MHz and 800 MHz spectrum. (Hey, I thought we were supposed

to have unbundled network elements? Oh, sorry. That's for when Nextel is only a telephone.)

So what's a fellow to do—especially a fellow with a limited radio budget and the operational needs to expand and develop the network, but with no clear path to the future?

Mobilfone, the regional paging carrier in Kansas City, has engaged the services of an energetic young Washington attorney named Michael Higgs who works in Brother Bob's House of Justice.

I was talking with Michael who, as are all good Washington attorneys, is willing to listen to your ideas and then charge you for them. The subjects of homeland security, nationwide communications, the FCC, the heritage of attorneys and general government largesse were all discussed—before we zeroed in on homeland security and its uncle, interoperability.

Because it looks as though we will have a new cabinet-level Department of Homeland Security, it can only mean there will be new shoulder patches, new logos, new uniforms and—you guessed it—*another new radio system*. In an effort to curb the feeding frenzy of corporate lobbyists, to help sedate the federal budget economists, and to actually provide a suitably workable solution for public safety, I believe there is a (kinda) simple solution for interoperable homeland security communications.

Michael even said he thought it had merit, so he may have to be paid for that opinion, too. The solution isn't too hard and only has two parts.

Part one involves regular local working folks: the local police, fire, EMS and public works departments that regularly handle "routine" emergencies. For interoperable, on-scene communications, these users simply need: a) a tested pre-plan, and b) some conventional, simplex, analog channels.

Part two: If "all politics is local,"

then all disaster communications also is local—at least local to the emergency services responders. However, communications related to the administration of the various responding federal agencies may not be local.

For administrators within this (new homeland security) agency, there may be a need for a communications system of far greater scope. Operating requirements, as often proffered by high-tech system advocates (including hardware vendors and users who are protectors of the vital public safety secrets), at least include the words "digital" and "encrypted."

An interesting opportunity presents itself because a communication system that closely parallels the predicted operational needs for the new department already exists. It's called Nextel. And from the company's most recent 10-K filing, it appears that Nextel needs cash. Perhaps a straightforward business deal could be struck involving the bulk purchase of both handsets and airtime minutes (pooled by geopolitical districts) for use by "non local" agency operatives.

Sure, federal fixed systems would still have a place. You can bet that the FBI, DEA, ATF and Secret Service would still need their "localized" conventional terrestrial systems. But a big segment of interagency interoperable communications could be handled using the system re-proven daily by construction workers, shipping companies and small businesses. After all, these regular local folks have been relying on economic interoperability long before talking about disasters became fashionable.

Dunford, MRT's public safety consultant, is technical services consultant for the Lenexa, Kan., police department. He is a member of the Association of Public-Safety Communications Officials-International. His e-mail address is ddunford@ci.lenexa.ks.us.

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Money is the focus

APCO Homeland Security Summit maps funding initiative.

By James Careless

Most emergencies, whether large or small, begin at the local level and involve first responders almost exclusively during the first 24 to 48 hours.

That was the message Glen Nash gave to U.S. Rep. Curt Weldon, R-Penn., and U.S. Sen. John McCain, R-Ariz., at the June 5 Homeland Security Summit conducted in Washington by the Association of Public Safety Communications Officials. Nash was president of APCO at the time of the conference.

"The wireless industry needs to be a key player in the political process," Weldon said during the conference in the Ronald Reagan Building. "These are big issues facing our nation, and we need good leadership; we need more organizations like APCO."

He added that trusting the government to make the right decisions without input is a risky proposition, as far as public safety radio communications networks are concerned.

"Things don't just happen because they make sense," Weldon said.

"The government wants detailed requests about what public safety agencies need," Nash told *MRT* after the conference. "Washington doesn't want people to turn up and just say, 'Give us money!'"

Yet, together with radio spectrum, money is the focus when it comes to improving first responders' radio communications. Money can make it possible for counties to unify police, fire and emergency

medical service communications into a single radio system, achieving interoperability.

Previous federal grants have helped state and local governments to purchase computer-controlled cross-connect switches wired to radios that are compatible with those used by agencies in their area. The result is an over-the-air interoperability that can be activated when needed.

Interoperability can even be as simple as exchanging hand-held radios among departments for access to each other's frequencies.

Nash said that, for the public safety community to receive the funding it needs, it must speak with a single voice — whether the voice is APCO or some other national body — and it must know what it wants. In describing what it wants, the public safety community has to be highly specific, he said.

Budget pending

At the time of the conference, the fiscal 2003 federal budget hadn't been passed.

"Nobody is really committing any dollars at the moment," Nash said. "There's been talk in Washington and everywhere about \$3.5 billion being made available for first responders for homeland se-



curity, but nobody at this point is really sure how those dollars would be divided up, who would have control over them, and how they would be distributed."

Despite the uncertainty, Nash said that local governments should formulate their homeland security radio communications plans, so that they can file as soon as the criteria for grant applications are issued. That would improve the chances of police, fire, and emergency medical services for funding.

"Both Weldon and McCain made it clear that public safety agencies have to be aggressive with their respective congressional representatives," Nash said. "In general, Congress knows that effective communications are key to providing homeland security, but they need to know what's needed to make this happen."

Careless is a freelance telecommunications writer based in Ottawa, Ontario, Canada. His e-mail address is jamesc@ttdesign.com.

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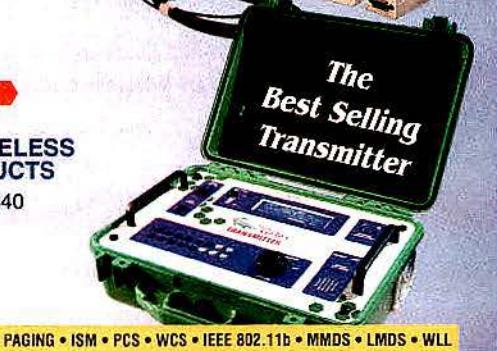
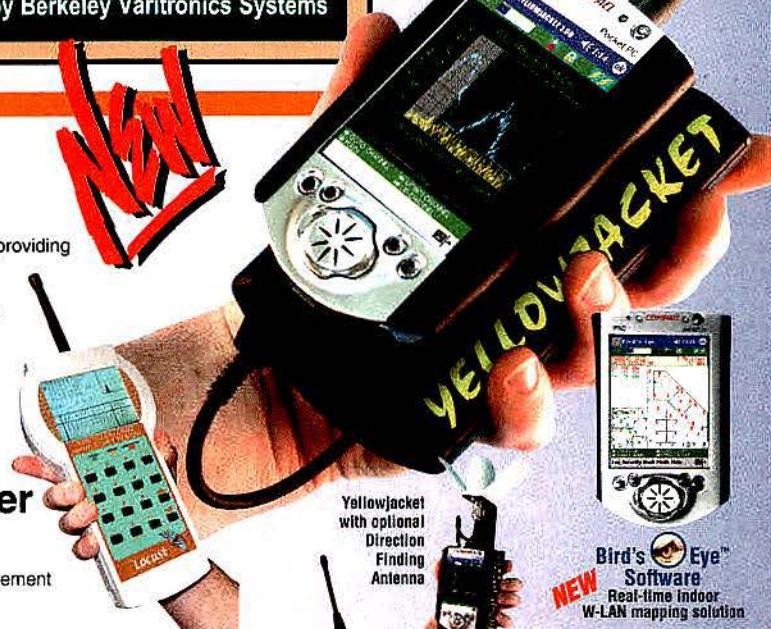
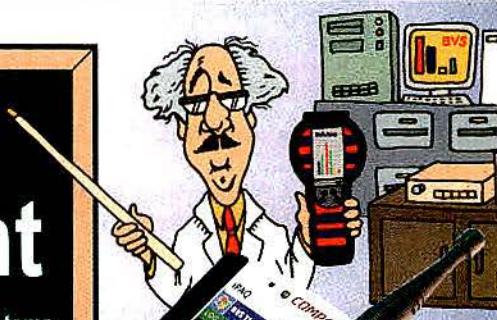
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APCO's approach

To help the process, APCO released a "White Paper on Homeland Security" in August at the organization's national conference in Nashville, Tenn. A copy of the paper can be found on APCO's Web site (www.apco911.org) and *MRT*'s

Web site (www.mrtmag.com). The white paper is intended to offer a cogent, clear position for the public safety community.

Nash said that APCO's homeland security initiative involved more than lobbying.

"We also need to put together a

'Best Practices' manual, to help educate our members on the best ways to handle these new and potentially overwhelming situations. After all, we're accustomed to fighting fires, but not on the scale of the New York World Trade Center. We deal with collapsing buildings all the time, but again not on the scale of the World Trade Center. And when it comes to casualties, we're not accustomed to dealing with thousands at a time, as was the case in New York City on Sept. 11, 2001."

Ultimately, Nash said, homeland security starts at the local level. For public safety end-users, a key component is reliable, interoperable communications.

Getting from the concept to the funding requires getting the message out. Discussions at the conference explained how decision-making is influenced from the ground up.

The managers responsible for 9-1-1 call centers and other public safety radio communication operation centers have to convince their bosses — usually the sheriffs, police chiefs and fire chiefs — that improved radio communications matters to homeland security.

The public safety agency heads need to convince mayors, city managers and county commissioners. The local political leaders need to convince their state legislators and governors. The states need to convince Congress and the president.

Publicity through newspapers and radio and TV outlets can help, as can community groups that traditionally support the efforts of public safety agencies.

Weldon told the audience at the APCO Homeland Security Summit that the public needs to know that first responders are on the front line of homeland security. If the public safety community can put that message across and get the politicians on board, the money will follow.

But if agencies sit back and wait, nothing's likely to happen, Weldon warned. ■

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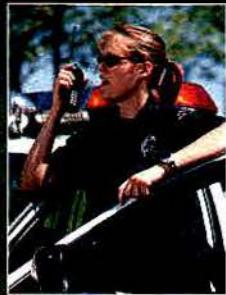
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Poor man's multisite trunking

There's money to be made in multiple-site trunking—if you keep your costs low enough.

By Don Bishop

Dressed in a pinstriped suit and carrying a briefcase full of money, opportunity came to many 800 MHz SMR operators during the past decade in the form of a Nextel representative. The opportunity was to sell their systems to Nextel, sometimes for millions of dollars.

The second time around, opportunity has come in the form of UHF and VHF trunked airtime service systems. Some of the same ex-800 MHz SMR operators used their Nextel money to re-establish themselves in the dispatch business. Some are newcomers.

No “one-size-fits-all” trunking system exists. Depending on the urban, suburban or rural nature of a market, whether Nextel has coverage there, what kind of fleet customers need service, and the relative need for multiple-site, wide-area coverage, an airtime system operator might choose one vendor's product over another.

Texas ESAS system

Lionel Chatel of MTW Communications in Bay City, Texas, has placed his money with Relm Wireless, West Melbourne, Fla., for the company's UHF “extended sub-audible signaling” multiple-site trunking system.

“We had purchased LTR-Net, but because of the rising mobile unit costs, we had to abandon the system. It started with a reasonably priced radio. But now it's between \$900 and \$1,000,” Chatel said.

“Then we looked at PassPort. At the time, there were delays in getting the equipment to work, and the backbone was pricey. On the

Keeping it easy on the pocket

Another method for multiple-site networking for LTR operators has been available from IDA Corporation, Fargo, N.D., since 1991.

“The Net-Link system is linking thousands of LTR channels today. What it offers is multiple-customer, multiple-site networking for LTR systems,” said Reed Danuser, IDA's director of marketing.

Danuser said that some other systems, such as PassPort and ESAS, use a switch with an enhanced protocol.

“The biggest difference with Net-Link is that you're using your existing frequencies, no modification is required to the radios in the field, no phone lines or microwave links are required to connect the sites, and no DTMF or other signaling is required,” Danuser said.

“On the positive side, it's cost-effective. It's an elegant, simple solution,” he said.

“The negative side of Net-Link is two-fold. It's inherently inefficient because it ties up two channels, one at each site,

for a single conversation. The other is that it's not automatic. The system doesn't know where your vehicle is, so it doesn't automatically network you. The operator needs to physically change the system and group in his radio to make a network call,” Danuser said.

Net-Link has been enhanced so it will carry three conversations simultaneously.

“What Net-Link does is to create an RF link between the sites, controlled by a PC. You can actually be carrying on three conversations at the same time—one from site A to site B, another from site A to site C, and a third from site B to site C, for example,” he said.

Danuser said that Net-Link attracts any system operator that wants to offer wide-area dispatching, so long as they have LTR systems.

“The charm of Net-Link is that there is no specialized equipment. It's off the shelf. The investment is modest, and it works and has worked for 10 years,” Danuser said.

other hand, several companies make PassPort end-user units, which keeps the price down, but not enough to offset the cost of the backbone,” he said.

“MPT 1327 looked good, but it isn't backwards-compatible with LTR.”

So, there are the three key factors for many operators: *subscriber unit cost, backbone cost and LTR compatibility*.

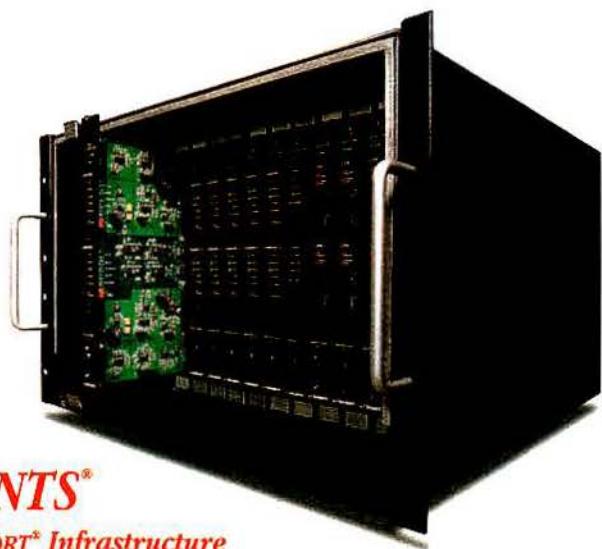
Chatel said that the Relm's Uniden brand ESAS radio costs about half what the E. F. Johnson LTR-Net radio costs. A Johnson spokesman said that the company supports LTR-Net primarily by licensing the technology to other manufacturers. Two other manufacturers, Motorola and Unimo Technology, have such licenses, but apparently do not make LTR-Net subscriber units.

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Chatel said that a choice of backbone technologies makes all the difference in the world when it comes to the cost of linking multiple sites together. His system uses *dial-up telephone*, sometimes known as "plain old telephone service," or POTS.

"POTS makes the backbone rea-

sonably priced, compared to T1 or even frame relay. A frame relay 64 k line between two sites was going to be \$1,300 a month. We're doing it with POTS lines for \$234. If a POTS connection goes down, it disrupts itself back up," Chatel said.

Chatel also said that the ESAS switch that controls LTR repeat-

ers is less expensive, by half, compared to some alternatives.

His system includes three sites in Bay City, Wharton and Victoria. LTR customers who travel from one coverage area to another have to switch manually. With ESAS, the sites hand off automatically, and units have electronic serial numbers in addition to group call. Electronic serial numbers prevent cloning and airtime piracy, allow individual calls and let operators disable radios lost, stolen or linked with unpaid airtime charges.

Chatel's customers include fleet operators, farmers, petroleum distributors, oil field service companies, cable TV companies and some government agencies. Among others, his system attracts users who go off road.

Extended coverage

"Nextel and the cellular companies cover the main highways and are digital so their coverage doesn't extend far along side roads. We go into the country where customers need coverage," Chatel said.

Chatel envisions using ESAS to form a large coop network to compete with Nextel for wide-area dispatch customers.

"We are talking to other dealers about forming a large network. As we get more dealers involved, the size will grow. We can incorporate small mom-and-pop operations with one repeater here and there who might go broke without wide-area service to increase their service value and to allow the sale of wide-area dispatch," Chatel said.

Chatel has ambitious plans—he wants to get several states involved by the end of the year.

Another Texas dealer, Steve Bosshard, owner of Bosshard Radio Service in Temple, said that he envisions a statewide system with rural market coverage that "the big guys don't want to look at."

"I'd like to see a unified system throughout Texas using primarily Internet or VoIP to tie tower sites together to compete with Nextel's 'direct connect.' Nextel is formidable, but they

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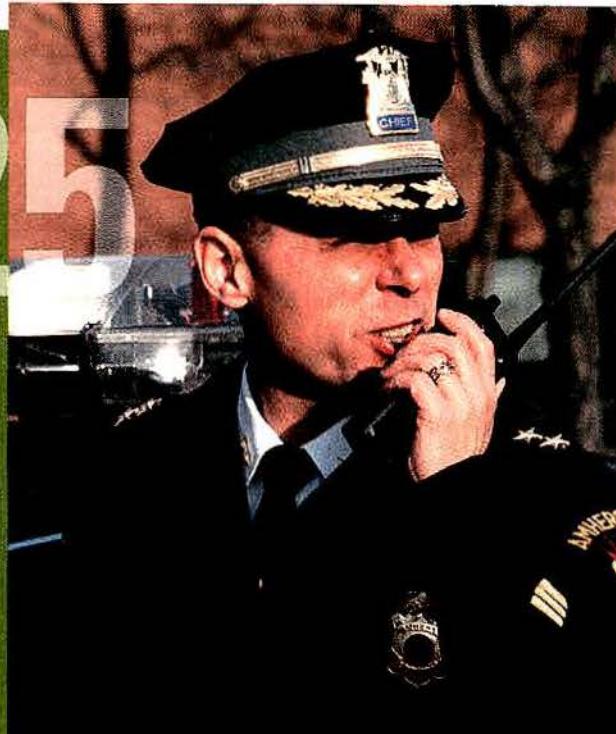
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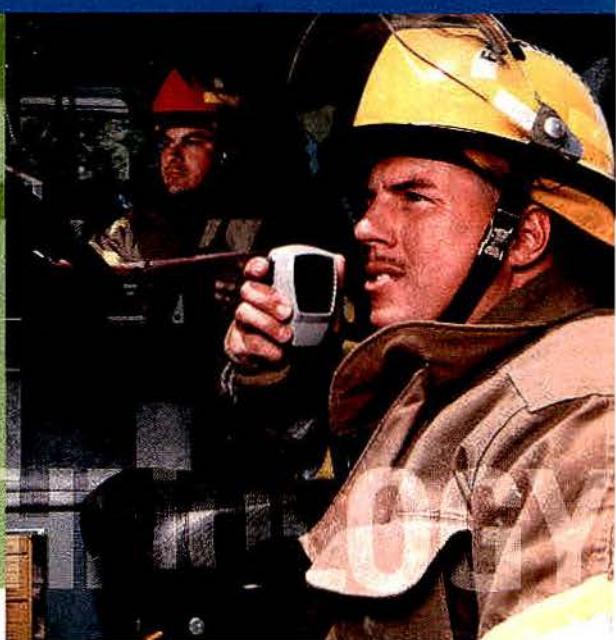
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don't fit everything. We need to look beyond 'one tower, one system' and look at value-added features," Bosshard said.

He said he chose ESAS for three reasons:

Relm's business prospects — Relm's customer base of government agencies and conventional two-way radio users that includes more than UHF trunking "makes me think they will stay afloat," he said.

ESAS not new — Bosshard recalled that ESAS first came to market in 1996 in the 800 MHz band.

Backbone choices — "Some multiple-site systems require relatively expensive T1 links. A T1 from Waco to Temple is \$1,300 a month, and together with site rental, that makes the front-end cost high. ESAS supports VoIP, which took the cost down to \$200

"We can make those direct-connect calls like Nextel and wide-area group dispatch calls.

And the billing is built-in. All you need is someone to send the invoices. It's an intense solution."

per month," Bosshard said.

At Relm's product manager, Ken Klyberg, said that ESAS can use POTS, 2-wire E&M, 4-wire E&M, T1, E1 or VoIP to connect sites.

Mix and match

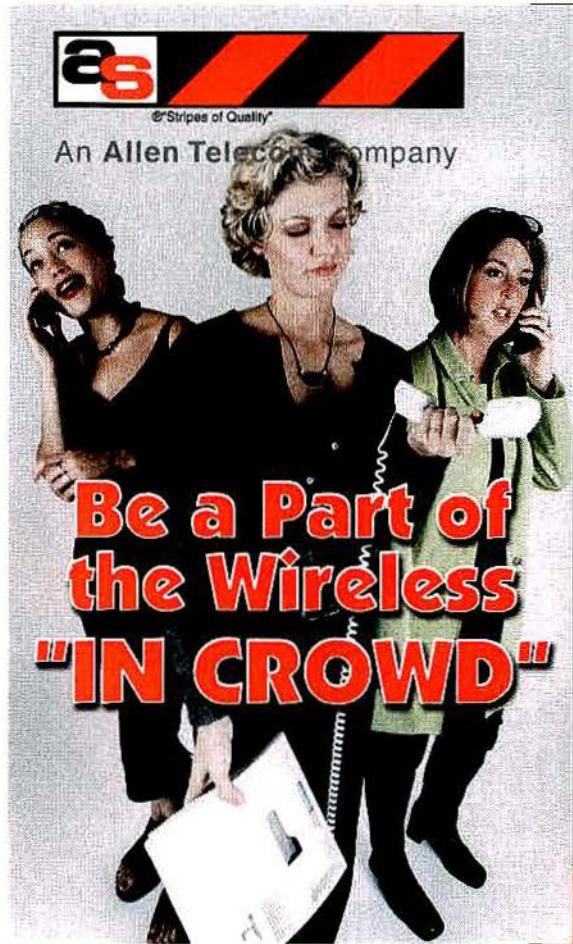
"Our system is a hybrid. You can connect two cells with POTS, the next cell with microwave, and the next with VoIP. You can mix and match. The network can be config-

ured in a star, mesh or linear fashion, or a combination of each. With the current version of ESAS, you can hook as many as 128 cells together," Klyberg said.

Klyberg said that ESAS offers seamless roaming, voice mail, paging, GPS and backwards-compatibility to LTR.

"Think Nextel in analog with the added capacity of wide-area group dispatch at the same price. Nextel can do it, but it's cost prohibitive. They have to light up every tower. We can make those direct-connect calls like Nextel and wide-area group dispatch calls. And the billing is built-in. All you need is someone to send the invoices. It's an intense solution," he said.

Chatel was impressed. He put his money—thank you, Nextel—where his mouth is, and bought \$950,000 worth of ESAS equipment. ■



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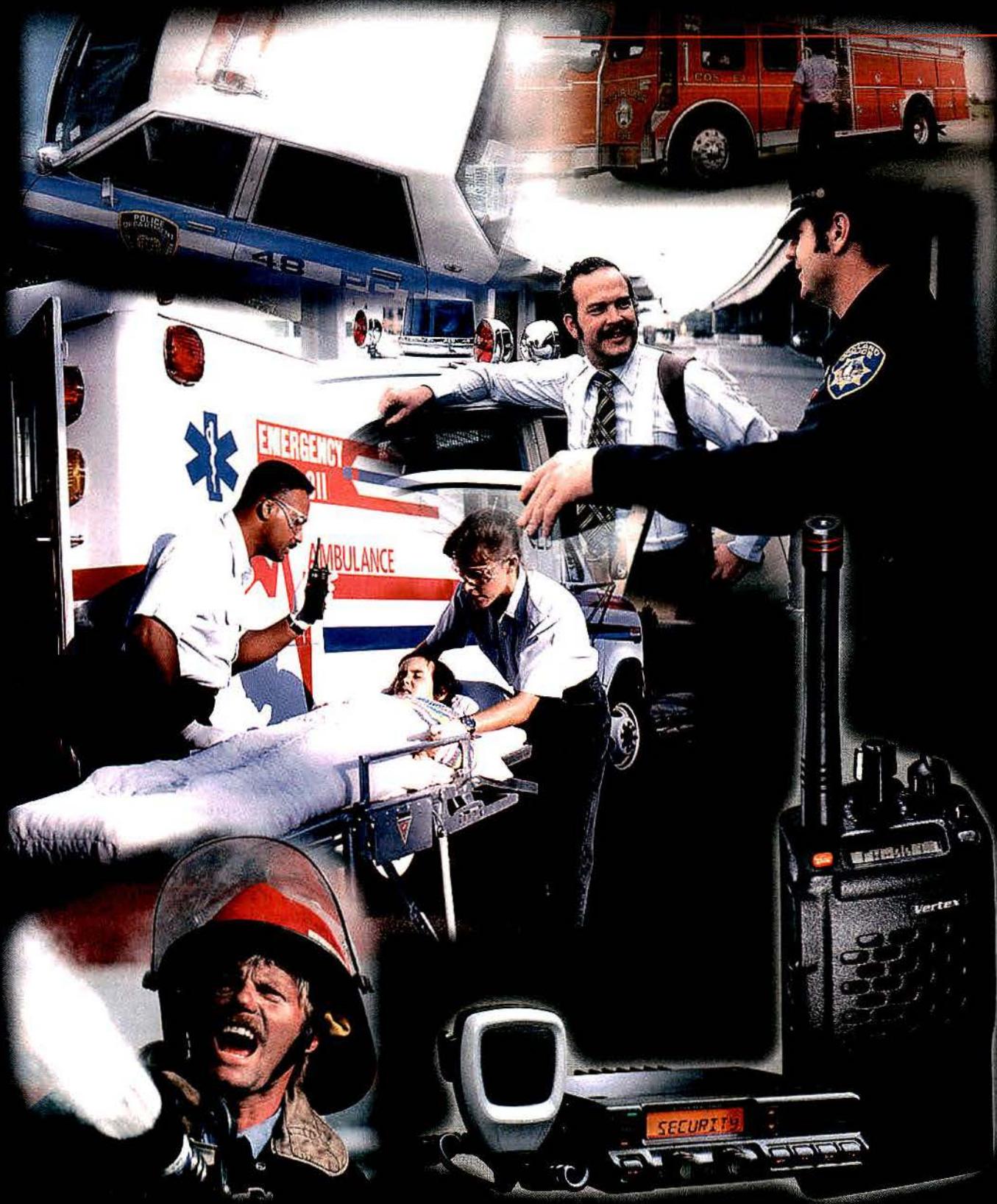


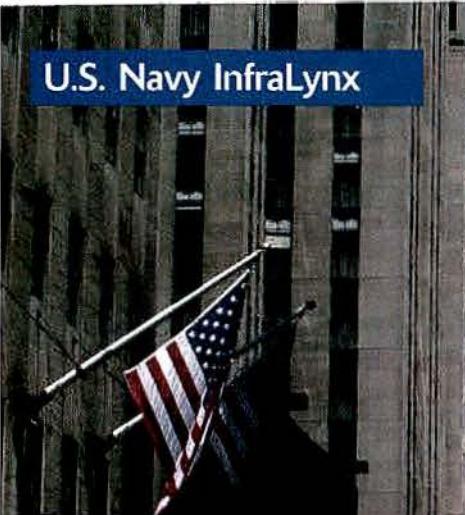
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InfraLynx Hummer delivers interoperability on wheels

The sometimes military nature of incidents that call first responders to action may demand a military-style interoperability vehicle.

\$800,000 buys a fully equipped InfraLynx Hummer, shown in New York during a demonstration road show and (inset) compared to the size of an SUV.

By James Careless

The U.S. Naval Research Laboratory in Washington has outfitted a high-mobility, multi-purpose, wheeled vehicle (HMMWV, pronounced "Humvee" or "Hummer") with almost every telecommunications link a public safety agency might need. Interoperable radio communications from 2 MHz to 800 MHz; private cellular and landline telephone networks; even microwave and two-way satellite communications for voice, data, and video are included in the sleek black truck dubbed InfraLynx.

"Our goal was to devise a unit that could roll into a 'hot zone' and immediately provide first responders with the connectivity they need," said Chris Herndon, head of NRL's Tactical Technologies Development Lab, which developed the InfraLynx. "In particular, now that first responders are faced with the possibility of coordinated terror attacks, we wanted to make sure that they can talk easily with each other and the outside world."

Before Sept. 11, 2001, the lab was developing modular communications systems for the military, using standardized RF components that work in all kinds of vehicles,

rather than doing custom-installs for each application.

"A few days after [the terrorist attack], we were asked if we could combine some of our modular units into a radio recovery vehicle for New York," Herndon said. "Within 24 hours, we had tailored a Hummer for military-style operations at Ground Zero."

This radio recovery vehicle became the blueprint for the InfraLynx.

Equipped with a rigid shelter

Careless is a freelance telecommunications writer based in Ottawa, Ontario, Canada. His e-mail address is jamesc@tjtdesign.com.

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with a roof-mounted 1.5m satellite dish, the InfraLynx is fitted with a JPS Communications ACU-1000 modular interconnect system. You can plug as many as 10 two-way radios or handsets into

the computer-controlled cross-connect, but the correct radios must be on hand to let the ACU interconnect the required communications.

"We have a complete suite of 24 radios, from Ericsson to Motorola, in the InfraLynx. And we have some of the new software-programmable radios that are under development. These units can simply be reprogrammed to emulate whatever

modulation and bandwidth you need," said Herndon.

With its 1.5 m satellite antenna, the InfraLynx can connect as many as 96 landline telephones. The demand for communications when the New York World Trade Center's twin towers caught fire and collapsed along with other buildings proved that an alternative connection to landlines matters.

"What first tied up cellular communications in New York wasn't that the airwaves were jammed, but rather that Verizon's WTC trunking vault was destroyed. Using the InfraLynx, we can 'reconnect' landlines to the outside world in a few minutes," Herndon said.

When cellular communications were restored in New York on Sept. 11, they were jammed by frantic callers. InfraLynx is equipped to provide 24 channels of private cellular communications that the public

can't access, keeping them open for first responders.

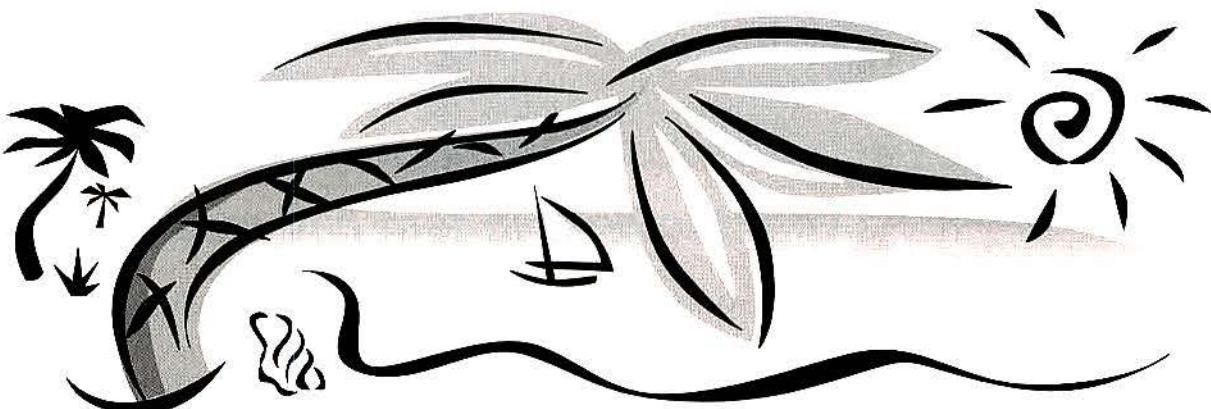
InfraLynx also supports data and fax communications, and can patch hand-held two-way radios directly into the telephone system. Its satellite dish can uplink video, so headquarters staff can watch what's happening. InfraLynx also can download video to allow officials to speak directly to rescuers.

With large diesel tanks, "the InfraLynx can run for up to four days without refuelling," said Herndon.

As first responders in New York learned, having enough fuel to keep running proved to be a challenge.

Money for interoperability

In the wake of Sept. 11, NRL received enough money from the Navy's Counter Terrorism Technology Task Force to build two



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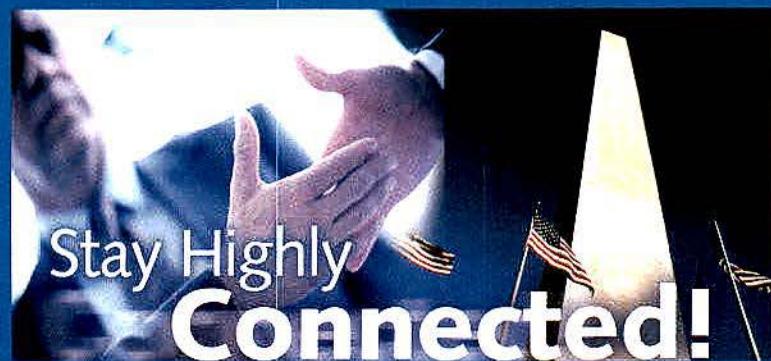
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InfraLynx trucks. Today, they're travelling around the country, showing their capabilities to public safety managers and politicians.

NRL has estimated that turnkey InfraLynxes could be built for \$800,000 each. Initially, it appeared as though the Department of Defense would buy six more for



Parked on a Manhattan street, the InfraLynx can run for four days on one tank of fuel.



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placement in several large cities. But it appears as though the Department of Defense is waiting to see what the proposed Department of Homeland Security might do with this technology.

In the meantime, Herndon and the NRL are focusing on public safety's grass roots.

"We're trying to get local communities interested in the InfraLynx, and what it can do for them," Herndon said. "That's why we're staging exercises and demos, to get local officials thinking, and hopefully to motivate them to put an InfraLynx into next year's budget plans."

Washington may eventually help with funding. But some cities aren't waiting. Chicago's Office of Emergency Communications intends to budget for an InfraLynx.

"We also have inter-agency agreements with the Office of Domestic Preparedness, the National Institute of Justice, and the Washington, D.C., Emergency Management Agency," Herndon said.

"In an effort to keep costs down, we've used as much off-the-shelf equipment as possible. And we're interested in licensing the technology to the private sector, so that vendors can start building the InfraLynx commercially. Given that this vehicle contains such a wide range of equipment, we don't expect any one company to be able to do the job. That's why we're looking at forming partnerships with companies in the private sector," Herndon said.

For more information on the InfraLynx, visit www.infralynx.com or www.nrl.navy.mil.

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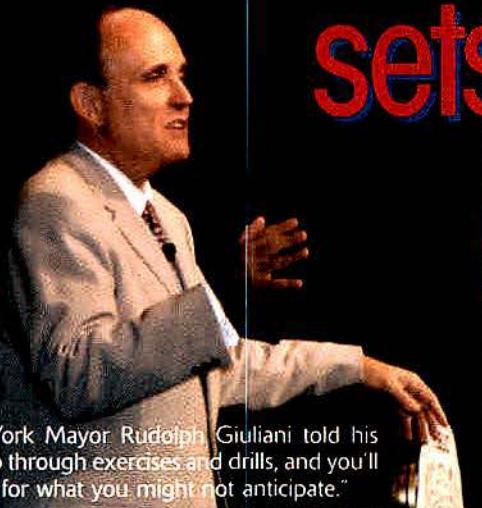


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In Nashville, APCO sets sights on a global stage



Former New York Mayor Rudolph Giuliani told his audience to "go through exercises and drills, and you'll be ready even for what you might not anticipate."

by Don Bishop

If you could spell "political," you could have a front-row seat at APCO's 68th Annual Conference and Exposition.

The Association of Public-Safety Communications Officials—International snagged former New York Mayor Rudolph W. Giuliani, former New Hampshire Gov. John Sununu (also former President George Bush's chief of staff), Michigan Gov. John Engler and Pennsylvania Congressman Curt Weldon to bring on the star power in Nashville, Tenn., on Aug. 12-15.

Also featured were Ron Miller, chief information officer at the Federal Emergency Management Agency, and James E. Hall, former chairman of the National Transportation Safety Board.

Giuliani speaks — As many as 300 people were waiting to hear Giuliani a half-hour before the doors opened to the huge Delta Ballroom in Opryland Hotel. Eventually, more than 1,000 people were seated to hear the mayor explain his five points of management—philosophy, preparation, teamwork, courage and communication—in the context of governing New York City, especially in the period following the terrorist attack on the World

Trade Center on Sept. 11, 2001.

In the end, Giuliani credited firefighters, police, emergency medical service crews, and passengers and crew aboard a hijacked Boeing 757 jetliner who forced it to crash in Somerset County, Penn., with thwarting the terrorists' attempt to destroy the American spirit.

"If we let terrorists frighten us, they win. Terrorism is just one more risk we face. Life is full of risk. Terrorism is not the *biggest* risk. It's a risk. The risk of disease is greater, cancer or heart disease, or becoming a victim of domestic crime. The risk of being killed by a drunk driver is greater. All those risks we live with, and we exercise our freedoms.

"If we're brave enough to live with those risks, we're brave enough to live with terrorism," Giuliani said.

Referring to public safety radio communications, Giuliani said, "I am in favor of your support for the consensus proposal before the FCC that would allow public safety to have more frequencies and better communications. Thanks to you and Nextel who agreed on that. It can be positive for the future."

Here's the connection: The mayor's New York-based consulting company, Giuliani Partners, and Nextel Communications, McLean, Va., have what

the two have described as "a strategic alliance to significantly improve public safety communications across the United States."

Known collectively as the Private Wireless Coalition and including Nextel and APCO, several FCC licensees and other private radio and public safety membership organizations reached a consensus about rebanding the 800 MHz band. For that reason, they refer to their reply comment in the FCC's 800 MHz public safety interference proceeding as a consensus proposal, although a majority of those filing comments oppose rebanding.

Town Hall Meeting — Joshua Davidson, the president of the Town Hall Meeting's sponsor, Accelerate Wireless, does some business with Sununu. Once he secured a speaking commitment from Sununu, now president of JHS Associates and a partner in Trinity International Partners, the governor brought in some more political names.

"We have ... to accept the responsibility to break historic molds and address issues and realities we learned from the tragedies [of Sept. 11]. I recognize how we talk about what we do in communications has to focus on technology, standards, spectrum policy and funding. I be-

Check out the special report, APCO 68th Annual Conference and Exposition, at www.mrtmag.com.

Former New York Mayor Rudolph W. Giuliani — Read his entire speech.

Town Hall Meeting — Including former New Hampshire Governor John Sununu, Michigan Gov. John Engler, Pennsylvania Rep. Curt Weldon and FEMA Chief Information Officer Ron Miller.

Former NTSB Chairman James E. Hall — Read his abbreviated remarks (Hall surrendered time to Giuliani) and the text of his intended speech. Hall explained the importance of lessons learned from investigations, and the preparation and emergency simulations drawn from those lessons.

New APCO President Thera Bradshaw — Addressing the closing banquet, APCO's new president details her goals for the association and announces the opening of a new APCO office in Washington.

Vendor interviews and news — More than a dozen stories give details about business trends and technologies offered by vendors that exhibited at APCO.

Sessions — Committee meetings and individual sessions get down to business.

ment would not dictate a solution to interoperability. Instead, he said the government needs to create a framework with incentives for interoperability and provide funding, especially for volunteer fire departments: "There are more 'have-nots' than 'haves,'" he said.

Thera Bradshaw, APCO president — The association's new president addressed the closing banquet and outlined a four-point program, including a global reach for the association, alliances with other U.S. membership organizations, strategic thinking and leadership development.

She also announced the opening of an APCO office in Washington D.C.

"In response to the terrorist attacks last year, a valuable window of opportunity opened for us, and we should seize that opportunity for the sake of people who lost their lives. With homeland security and unequalled resources dedicated to improving them, we will seize the opportunity to make our voice heard and bring home the resources to get the job done. From this day forward, APCO International will literally be in our nation's capital, the most powerful city in the world," Bradshaw said.

Exhibition — Nearly 300 vendors took booth space at the exhibition, including 50 first-time exhibitors.

Kenwood Communications showed a new 800 MHz Project 25 trunking and conventional public

safety portable and a new model of VHF and UHF FM mobile transceiver.

JPS Communications brought a 2.4 GHz link that works with a transportable repeater to extend radio coverage into high-rise buildings.

Vertex Standard was seen making what its land mobile division vice president, Scott Henderson, described as "a major push into the public safety market" with a new series of high-performance, high-specification mobiles.

Entertainment — Sgt. Daniel M. Clark of the Massachusetts State Police sang the national anthem, a medley of the five military branch anthems, several other patriotic songs and a song composed about first responders who died in New York when the World Trade Center collapsed. Performing after the Town Hall Meeting, the sergeant received four standing ovations.

Nashville is the home of the radio broadcast program "Grand Ole Opry," which inspired the renaming of the exhibitor-sponsored Tuesday evening celebration from "MANAPCO" to "Grand Ole APCO." The evening included food, carnival games and a performance by the Charlie Daniels Band.

More details about the APCO meeting are available on the *Mobile Radio Technology* Web site, www.mrtmag.com, in the special report "APCO 68th Annual Conference and Exposition." ■

lieve issues of technology standards and spectrum will evolve. It is imperative to get to a solution of those issues," Sununu said.

"But we must understand that there has to be a new way of doing business in formulating policy, inspiring significant aggressive infusion of funding and capital and ways of bringing these issues together in an environment that is political," he said.

With what seemed to be a combination of pride and disappointment, Engler said that Michigan's statewide 800 MHz radio system has been completed, but it fails to attract as many county and municipal participants as it should.

He said he wondered what would be the best way to build a statewide network and maintain local decision-making, while making sure that adjacent communities have interoperability as a priority for their police, fire and emergency medical service crews to talk with one another.

"That's where some federal money and policy should take us. At the state and local level, there should be incentives or rewards for those who collaborate ahead of rugged individuals who say they want to go it alone when that doesn't cut it in terms of homeland security," Engler said.

Weldon, whose background includes work as a volunteer firefighter and mayor, is known as the legislative architect of millions of dollars in grants to local fire departments administered through FEMA.

"What's frustrating to me as a supporter of military spending is that we spend \$62 million per year on international defenders, but money for local domestic defenders was \$15 million. Some say it's not a federal responsibility. I believe that firefighters should be allowed to maintain their identity and integrity," Weldon said.

"We need strategies whereby the federal government doesn't provide solutions, but incentives to put in place to use technology already developed," Weldon said.

Miller said that all disasters are local, and that the federal govern-

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Tuning In

New York union demands fire radio replacement

Peter Gorman, president of the Uniformed Fire Officers Association, New York City, issued a demand during an August news conference that the Fire Department of New York replace its hand-held portable two-way radios. UFOA represents about 2,500 captains, lieutenants and battalion chiefs among FDNY's 11,500-member department.

Last year, the department deployed 3,800 Motorola digital radios in an upgrade intended, among other things, to improve communications in high-rise buildings. In March 2001, the digital radios were withdrawn because of FDNY's complaints about inadequate coverage. The department redeployed its older analog radios, which were in use Sept. 11, 2001.

Inadequate coverage with those

radios has been cited as contributing to poor communications and possibly greater loss of life – especially among public safety-first responders – than might have been the case with better radio communications. Among those who lost their lives were 343 firefighters.

A source within FDNY told *Mobile Radio Technology* that a test of the digital radios was completed in late August and that the digital radios began to be redeployed Sept. 3.

Meanwhile, Gorman has called for a grand jury investigation of the failure of the digital radios and the resultant delays in replacing the old radios, such that Sept. 11, 2001, and 10 months later, FDNY was still using the old radios that he described as "inadequate."

IAFC president cites communications challenges

Speaking to an audience of fire department leaders in August at the International Association of Fire Chiefs national conference in Kansas City, Mo., the outgoing IAFC president, John M. Buckman, said that the first IAFC conference in 1873 was called to discuss "how to communicate with the nozzle person. Some wanted to run a phone line along the hose. So, in 1873, we talked about communications problems. We're talking about communications today."

Buckman, who is chief of the German Township Volunteer Fire Department, Evansville, Ind., said that the terrorist attacks on Sept. 11, 2001, have caused changes within fire departments, the nation and the world.

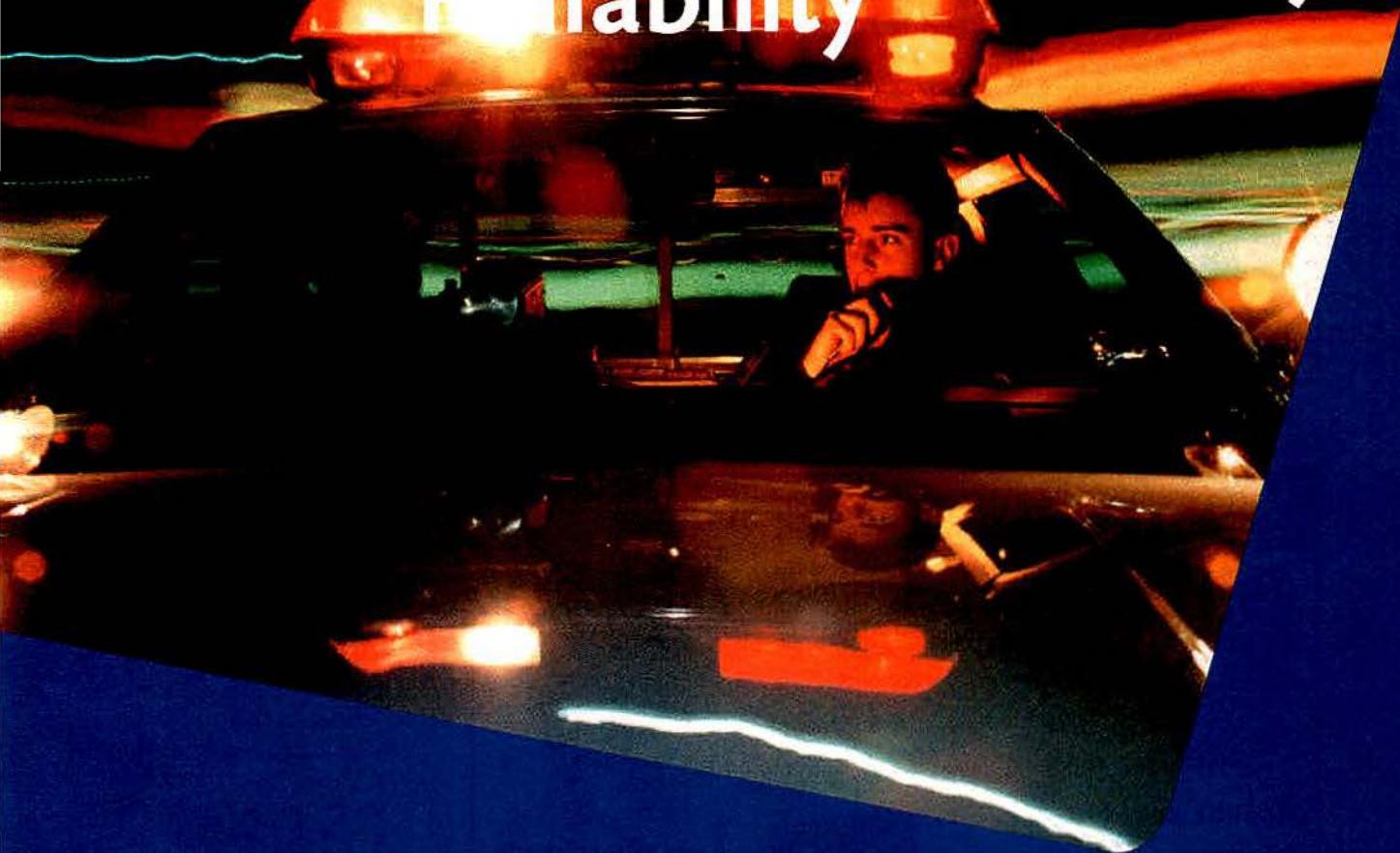
"We are under a microscope.

People want to know what the fire department does and why. They want to know, is the fire department doing things the same way and expecting different results? Are our people trained and equipped to meet new challenges?" Buckman said.

Buckman said that IAFC has been increasingly successful in making sure that legislation is pushed through Congress to give the fire service more money. He cited the Fire Act as a success achieved by IAFC together with other organizations. Buckman said that next year's federal budget is expected to include \$3.5 billion to improve first responders' capability to respond to terrorists. He said that the fire service has opportunity to get its fair share.



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News packets

• The *Natchez Democrat* in Natchez, Miss., reported that except for the Adams County Sheriff's office, all local agencies will be able to communicate with each other on a common radio system by the end of the year, thanks to a \$1.2 million contract awarded to Kay Radio of Vidalia, Miss., for a new 450 MHz radio system.

• Access Spectrum, Bethesda, Md., has concluded a technical services agreement with USMSS, Antioch, Ill., under which more than 150 Motorola Service Stations will provide spectrum monitoring, system compliance consulting, system engineering design and interference resolution services for Access Spectrum customers who lease spectrum for wireless voice and

data communications in the 700 and 220 MHz bands.

• Pegasus Communications, Bala Cynwyd, Pa., a 700 MHz Guard Band manager, has seen its Moody's Investment Services downgrade the debt instruments and preferred stock of two of its subsidiaries, and Moody's questioned the company's ability to continue operating under its current capital structure.

• Denver-based Ricochet Networks has re-launched its Ricochet high-speed wireless Internet service to consumers in Denver in a public-private partnership with the Denver government that gives the city free modems and service for municipal and public safety applications.

• The FCC has adopted a plan to require off-air digital TV tuners on almost all new TV sets by

2007. The move could improve prospects for using the 700 MHz band for two-way radio communications in areas now blocked by incumbent TV broadcast stations that must discontinue use of their 700 MHz channels once 85 percent of the TV households in their markets are capable of receiving digital television.

• The *Voice News*, New Baltimore, Mich., reported that Macomb county voters will decide in November whether to take on a temporary \$1.50 tax per home telephone to fund an upgrade of the county's 35-year-old 450 MHz police radio system to an 800 MHz system.

• The *Fauquier-Times Democrat* reported that delays loom in the construction of a \$7.2 million 800 MHz public safety radio system in Fauquier County, Va., because of problems in contracting for the necessary antenna tower space.

• The Industrial Telecommunications Association, Arlington, Va., has made available, at www.ita-relay.com, summaries of reply comments submitted in the FCC's WT Docket No. 02-55 proceeding to improve public safety radio communications in the 800 MHz band and mitigate interference to those operations.

• The *Anoka County Union* reported that Anoka County, Minn., will move swiftly to build a new public safety radio system thanks to special legislation passed by the state to give the county authority to bond as much as \$12.5 million to upgrade its 1970-era radio system to an 800 MHz system that can be coordinated with Minnesota's proposed statewide system.

• The Radio Club of America's 93rd anniversary dinner and awards presentation scheduled for Nov. 22 will feature a speech by Vincent Dunn, retired deputy chief of the Fire Department of New York, who will talk about the role that wireless communications played in New York City on Sept. 11, 2001. Information: www.radio-club-of-america.com.

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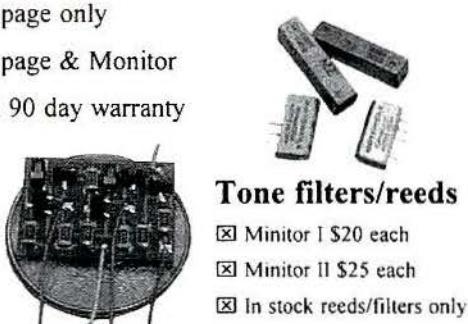
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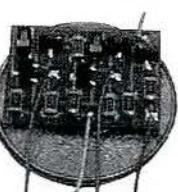
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SS-30	25	30	3 1/2 x 7 x 9 1/2	5.0

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MODEL	CONT. (Amps)	ICS	SIZE (Inches)	Wt.(lbs.)
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SS-30M*	25	30	3 1/2 x 7 x 9 1/2	5.0

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SRM-12	10	12	3 1/2 x 19 x 9 1/2	4.7
SRM-18	15	18	3 1/2 x 19 x 9 1/2	5.0
SRM-25	20	25	3 1/2 x 19 x 9 1/2	6.5
SRM-30	25	30	3 1/2 x 19 x 9 1/2	7.0

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MODEL	CONT. (Amps)	ICS	SIZE (Inches)	Wt.(lbs.)
SRM-25M	20	25	3 1/2 x 19 x 9 1/2	6.5
SRM-30M	25	30	3 1/2 x 19 x 9 1/2	7.0

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MODEL	CONT. (Amps)	ICS	SIZE (Inches)	Wt.(lbs.)
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SRM-30-2	25	30	3 1/2 x 19 x 9 1/2	11.0

WITH SEPARATE VOLT & AMP METERS

MODEL	CONT. (Amps)	ICS	SIZE (Inches)	Wt.(lbs.)
SRM-25M-2	20	25	3 1/2 x 19 x 9 1/2	10.5
SRM-30M-2	25	30	3 1/2 x 19 x 9 1/2	11.0

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Treasury, Justice award \$3 billion radio contract

Six companies have been awarded a joint \$3 billion contract to supply Project 25 digital land mobile radio technology to support federal law enforcement and public safety agencies.

Sharing in the contract are Daniels Electronics, Victoria, British Columbia; Datron World Communications; Vista, Calif.; E.F. Johnson Company, Waseca, Minn.; M/A-Com Private Radio Systems, Lynchburg, Va.; Motorola, Schaumburg, Ill.; and Thales Communication, Clarksburg, Md.

The U.S. Departments of Treasury and Justice made the step in what their announcement said is "another step toward increasing information sharing and synergy between law enforcement components. The standards-based technology will provide improved capabilities for law enforcement officers and agents from different agencies to communicate with each other in the field utilizing compatible land mobile radio subscriber units."

The units purchased by the govern-

ment include portable and mobile radios, portable repeaters and base stations, encryption key loaders and ancillary support accessories.

"The new Project 25 digital technology was specifically designed to improve communications interoperability among different government agencies and will greatly enhance coordination and cooperation among many different branches of law enforcement including ATF, the Customs Service, the Secret Service, INS, the FBI, the U.S. Marshals Service and DEA," a statement from the Treasury Department's office of public affairs reads.

"Open lines of communication are vital to tapping into all of the government's resources when investigating illegal activity and protecting the homeland," Treasury Under Secretary for Enforcement Jimmy Gurulé said on Sept. 13 in a prepared statement. "Today's contract is another step toward increased cooperation and communication between law enforcement components."

The government did not give a breakdown of the contract award by company. It described the contract as "multiple awards of Indefinite-Delivery Indefinite-Quantity contracts with a combined ceiling amount of \$3 billion over a five year contract life cycle."

The Project 25 standard activity has been pursued by a partnership among public safety radio users at various levels of government and industry to develop standards, based on user needs, for two-way radio equipment operating at VHF, UHF and higher bands. Project 25 has been adopted as a standard by various federal and state agencies in the procurement of radio equipment.

"The utilization of the standards-based open architecture provided by Project 25 will foster competition among manufacturers of land mobile radio equipment and systems, which should provide additional cost-effective solutions to both Treasury and Justice, as well as other government agencies that utilize this contract vehicle," the Treasury Department statement reads.

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Duplexer uses rugged resonators



The MR series from **Sinclair Technologies** includes a compact mobile duplexer for use in the 148 - 174 MHz, 406 - 512 MHz and 806 - 960 MHz frequency bands. It uses four to six rugged, carefully temperature-compensated helical resonators housed in a lightweight, aluminum extrusion. The unit has low-loss internal components and copper-center conductors. The duplexer can be retuned within the sub-band for which the unit was designed.

WWW.SINCTECH.COM

Notch filter offers easily adjustable tuner



E.A.G.L.E.'s TNF200 notch filters are useful in situations where selected frequencies must be attenuated while passing all others. These filters are commonly used to increase dynamic range of spectrum analyzers, remove interfering signals in high-gain amplifying systems, remove harmonics from signal sources or low-power transmitters, prevent receiver overload in collocated repeater installations, and identify or eliminate off-band interference at lower cost than cavity-type filters. The filter features an easily adjustable, multturn tuner and high rejection of notched frequency — typically 25 dB or better. It has a wide passband — to 3.0 GHz — and a low VSWR for accurate measurements. The 12 models cover from 0.5 to 1,300 MHz. It features a 10W power rating at the notch, a small size and a rugged case and connectors. The unit is contained in a heavy-duty, nickel-plated brass enclosure to provide shielding.

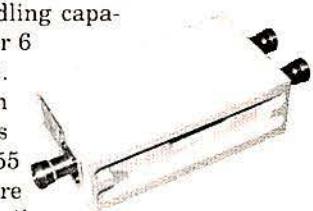
WWW.EAGLE-1ST.COM

Combiners allow single feedline for 2 bands

The KC-1011 series from **Kathrein, Scala Division**, includes three high-power dual-band coupler/combiners for use in the cellular and PCS wireless bands. The devices allow a multiband carrier or tower operator to use a single coax cable to connect base stations to antennas for each band. The series has three models: indoor, without dc pass-through; outdoor, without dc pass-through; outdoor, with dc pass-through. All provide isolation

greater than 70 dB, between bands with power-handling capability of 500 W or 6 kW per port. Intermodulation characteristics are rated at -155 dBc. All models are milled cavity, silver-plated 7/16 DIN RF connectors. Mounting kits in surface and pipe configurations are available.

WWW.KATHREIN-SCALA.COM

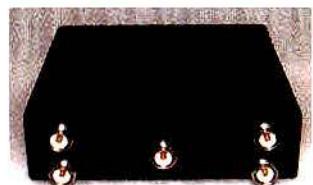


Filter duplexes 2 channels onto one antenna

dbSpectra's D & E band dual duplexer covers the 1,850 - 2,000 MHz band. The DBS 129AA allows two PCS channels to be duplexed onto a single antenna. This can reduce the cost of additional antennas or cables needed in a system. It features a low-profile 2U or 3U rack-mount unit, a single antenna output, a D-band transmit and receive, an E-band transmit and receive and a power rating of 25 W CW. The receive-to-receive isolation

is greater than 70 dB minimum, as well as the transmit-to-transmit isolation. The transmit-to-receive isolation is greater than 90 dB. The insertion loss is 2.2 dB maximum and 1.9 dB typical. Five-megahertz bandwidth is available for each filter.

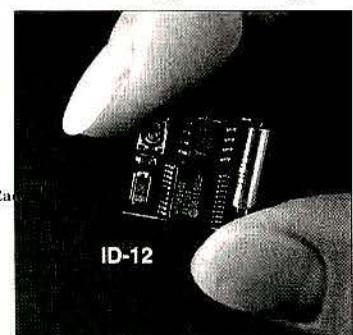
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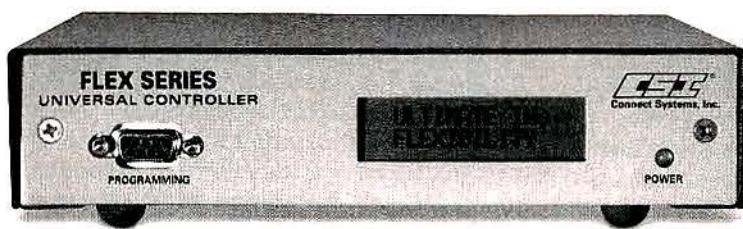
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Universal controller performs 14 functions

Connect Systems' Flex series universal controller functions as an interconnect, shared repeater tone panel, LTR system controller and communications decoder. The controller is designed to operate radios in any selected applications. The Flex unit contains all of the connectors common to units in the present Connect Systems' product line, including the decoders. The electronics within the unit allow I/O data to activate the chosen connectors, driven by a central programmable microprocessor. The unit is then programmed by the dealer by downloading free software chosen from a menu at the company's Web site. Any one of the 14 products may be recreated anywhere as



needed. New features and products will appear periodically that will be compatible with any Flex unit already in use or in distribution. The units can reduce distributor and dealer stock to one single model serving all available products, except the 6800 and RT8.

WWW.CONNECTSYSTEMS.COM

Dispatch software configures to user preference

ValorCAD SE from **Valor Systems** is dispatch software for public safety agencies. Features include mutual aid, mapping and linked records. The software is

configurable — for example, function names can be selected that the dispatcher is accustomed to using. Therefore the console feels familiar right away and training can be fast and intuitive. The company will offer a monthly subscription plan, which will allow immediate use of the system without making a major investment.

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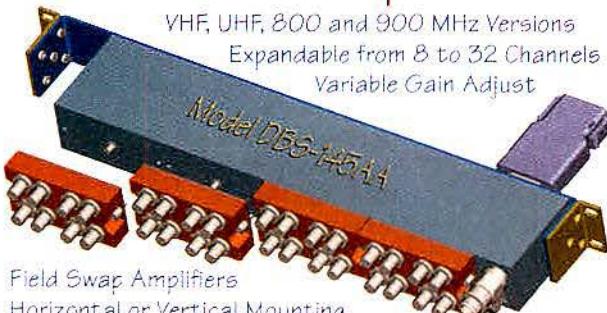
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Portable antenna improves reception

Centurion Wireless Technologies' EXH 'Tuf Duk' antenna incorporates both helical and quarterwave design, and can improve reception performance by 30 percent. An injection molding process increases the antenna's durability and flexibility. The antenna's size and other distinguish-

Receiver Multicoupler Deluxe



www.dbspectra.com

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ing features offer more usability, comfort and support for users of belt-worn radios. The antennas are individually tuned to VHF, covering frequency bands from 144 – 174 MHz and are available in connector configurations including SMA, BNC and select threaded styles.

WWW.CENTURION.COM

Cell antenna analyzer graphs return loss plots

The CellMate EX hand-held analyzer from **AEA Wireless** is a graphical 600 – 999 MHz cellular system analyzer for graphing and examining standing wave ratio and return loss plots.

Performance features include auto scaling, auditory cues, signal generator mode, relative field strength measurements, self test and calibration check functions, auto-off, and non-volatile memory to store 15 plots. The lightweight unit's Analyst Director software is Windows 95/98/ME/2000/XP-compatible and interfaces to a PC for increased curve stowage and printout capability.

WWW.AEWIRELESS.COM

Recorder works for VoIP systems

The Wordnet series 3 next-generation voice and data recording system from **Thales Contact Solutions** offers re-

cording capability for conventional telephony and radio communications, as well as the latest voice-over-Internet protocol systems. The recorder will provide an upgrade that allows existing Wordnet customers to migrate from traditional to IP telephony. The Windows 2000 compatible recorder seamlessly integrates with existing business systems, reducing cost of ownership. The recorder has a software "wrapper" around the operating system, making it impenetrable to hacker attack, database corruption and virus infiltration. The recorder gives authorized users Web-based replay for up to 32 users, and 164,000 channel hours of storage.

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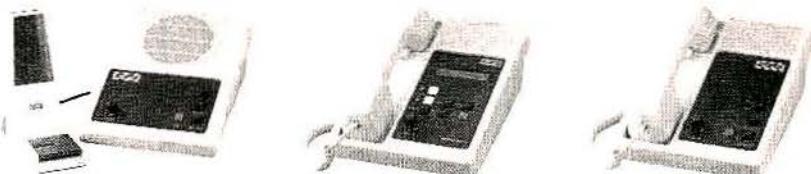
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Midland Radio's 70-112B VHF portable, two-way radio is for business and professional communications. Operating on conventional user-licensed VHF frequencies, the radio eliminates airtime fees for job-site communications, allowing users to talk 24 hours at no additional cost. Compact and lightweight, the radio packs a 16-channel capability and 5 W of power into a four-inch by two-inch by two-inch durable polycarbonate housing. The whole radio including the standard 1350 mAH NiMH rechargeable battery weighs 12 ounces. The radio features an adjustable transmitter output power (5 W or 1 W) by channel.

WWW.MIDLANDRADIO.COM

Thick mount works for panel trucks, ambulances

The MABVT8 from Antenex is a thick mount for panel trucks, ambulances, buses and other challenging thick-walled installations. It will mount in material with thicknesses ranging from 0.032 inch to 0.500 inch and works in $\frac{1}{4}$ inch or $\frac{3}{8}$ inch mounting configurations. The mount features a stainless steel-piercing 10-point collar nut, all brass construction using a brass alloy with a Rockwell 78 hardness, and milled flats on the retainer ring for more positive mounting. It also offers a crimped and soldered ground lug and low-loss Delrin coaxial insulator components. The mount will work with any frequency to 1,000 MHz and comes standard with 17 feet of coax cable.

WWW.ANTENEX.COM

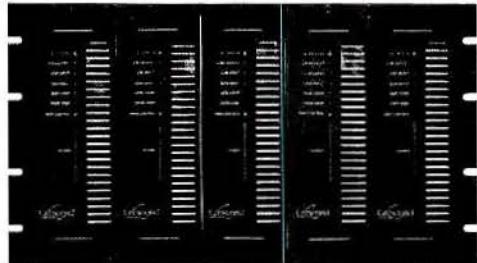
In-line surge protectors works from dc to 6 GHz

RF Connectors' RFS-2093 is a 50-ohm, in-line surge protector with N-female interfaces designed for use with frequencies from dc to 6 GHz. One side of the protector is a standard MIL-C-71A standard N-female interface, and the other end is an N-female bulkhead. It has an aluminum die-cast body with a fast-action gas-tube arrestor and is compliant to IECC/IEEE standards. Gas-tube arrestor specifications are dc breakdown voltage of 90 V; shockwave breakdown voltage at 5 kV/microsecond of 1 kV; maximum shockwave current of 5 kA at 8/20 microseconds; ac breakdown current of 25 A at 9-cycle 50 to 60 Hz; insulation resistance of 10,000 M-ohm and electrostatic capacity of maximum 1 pF.

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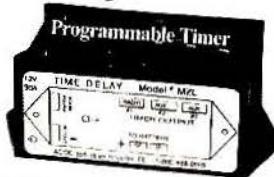
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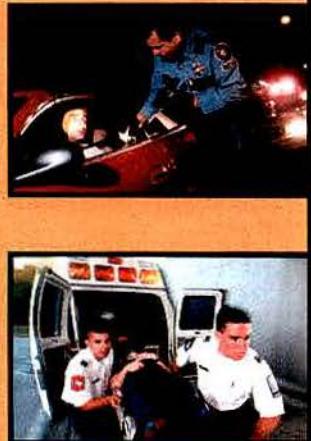
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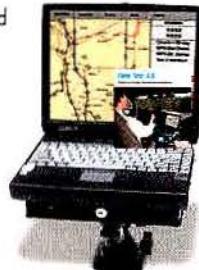


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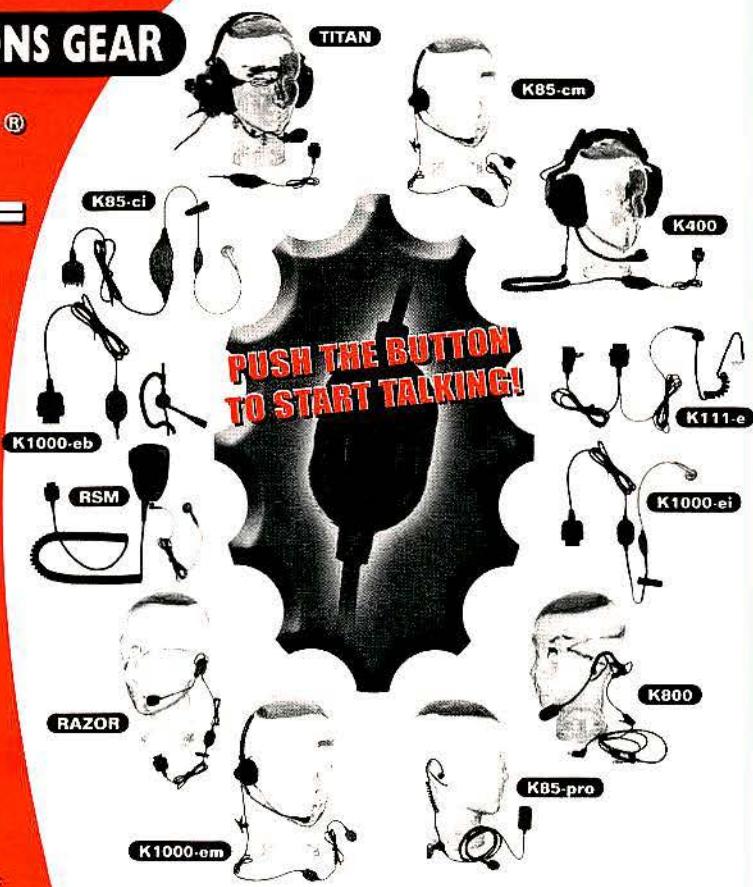
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Harmful interference

When in doubt, you can call the FCC. But please call APCO first.

Keith M. Bradshaw

Almost every public safety two way radio user experiences interference, from slightly annoying noises to rogue signals that render systems unusable. Why not call the FCC? The FCC *will* respond—if the interference is *harmful*.

FCC rules (CFR 47, Part 90, Section 90.7) say harmful interference is “any emission, radiation, or induction which specifically degrades, obstructs, or interrupts ... service.”

If you can hear units calling, and they can hear dispatch despite interfering noises, then the interference is not *harmful*.

47 CFR 90.403(e) requires licensees to take “reasonable precautions to avoid causing harmful interference. This includes monitoring the transmitting frequency for communications in progress and such other measures as may be necessary to minimize the potential for causing interference.”

‘Enforceable’ interference

Harmful interference caused by a licensee operating in violation of FCC rules is “enforceable.” Other interference does not break the rules.

Yet, a nuisance interference victim has alternatives. If an investigation confirms that everyone involved is operating within their licensed requirements, the offending party may cooperate to eliminate or minimize the problem—provided your own equipment has no unresolved problems.

Overcrowding usually is what causes nuisance interference, so you normally can’t “sic the FCC on ‘em.” But you can, if the offender has no license, operates

Helpful Web links

Read FCC rules and regulations at <http://wireless.fcc.gov/>. Find TIA’s interference definition at www.tiab2b.com/glossary. Information about interference causes and cures appears at www.motorola.com/cgiss/docs/Interference_Technical_Appendix.pdf.

outside its license terms, uses defective equipment or deliberately or negligently interferes with your communications.

Under terms of a Memorandum of Understanding with the FCC, APCO will “research and verify the substance of a compliance or interference complaint. APCO will attempt to identify the source of the interference through local monitoring conducted by the complainant licensee,” which means that you must attempt to find the interference source yourself or with help from service representatives or vendors.

Only if your attempts fail will APCO ask the FCC to help. Once the interference source is known, APCO will try to resolve the matter. If APCO’s effort fails, the association will return the matter to the FCC.

Begin by filling out a “Compliance Request Report” from the APCO Web site. Click on “Frequency Coordination,” and under the “Technical” heading, click on “RF Interference.”

The process is the same for 800 MHz system operators receiving interference from Nextel or other cellular-type commercial carriers.

APCO is attempting to identify and resolve cases of harmful interference to 800MHz public safety

systems. Its Project 39 committee submitted an interim report to the FCC detailing nationwide interference reports.

FCC perspective

Riley Hollingsworth, FCC special counsel for enforcement, said, “If you are in doubt about reporting the interference, by all means report it. All interference to public safety is important until we establish that it will be nuisance rather than harmful. Also, APCO does a splendid job on these cases. To those cases referred by APCO, the FCC is more responsive now than perhaps it was in years past. We enjoy trying to resolve those cases. The field operation also has a much better travel budget these days.”

Harmful or not, interference may be a problem. Curing it depends on finding the cause and on negotiation with the offender, mediation by APCO or enforcement by the FCC. With time and patience, interference can be eliminated, minimized or even tolerated once the nature and source of the interference is understood.

Bradshaw is a certified electronics technician. He works as the service manager at Macomb County (Mich.) Technical Services. His email address is macrad@libcoop.net.



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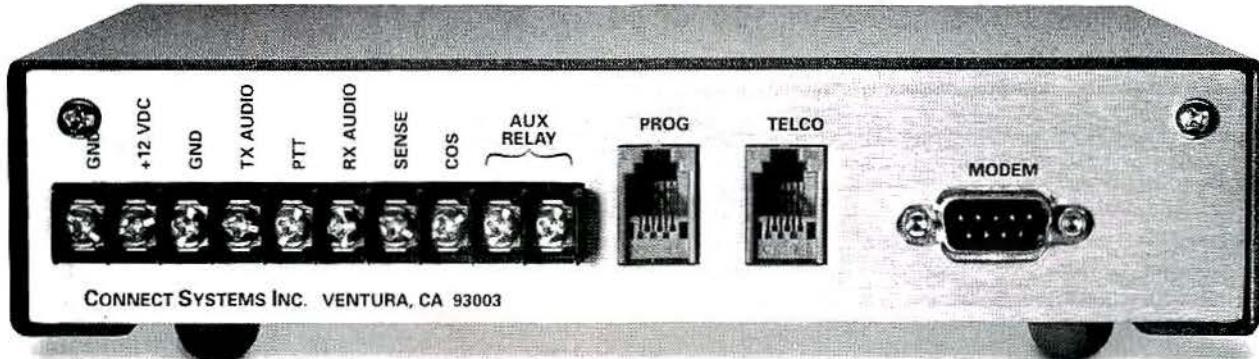


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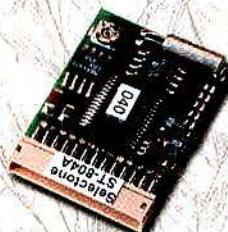
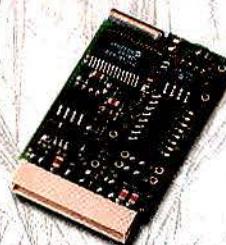
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